



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

| | | | | |
|---|-------------|----------------------|-------------------------------|------------------|
| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
| 10/628,181 | 07/25/2003 | Min-Yi Shih | 134404 | 5586 |
| 6147 7590 03/16/2007 GENERAL ELECTRIC COMPANY GLOBAL RESEARCH PATENT DOCKET RM. BLDG. K1-4A59 NISKAYUNA, NY 12309 | | | EXAMINER VARGOT, MATHIEU D | |
| | | | ART UNIT | PAPER NUMBER |
| | | | 1732 | |

| | | |
|--|------------|---------------|
| SHORTENED STATUTORY PERIOD OF RESPONSE | MAIL DATE | DELIVERY MODE |
| 3 MONTHS | 03/16/2007 | PAPER |

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

| | | | | |
|------------------------------|------------------------|--|---------------------|--|
| Office Action Summary | Application No. | | Applicant(s) | |
| | 10/628,181 | | SHIH ET AL. | |
| | Examiner | | Art Unit | |
| | Mathieu D. Vargot | | 1732 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 December 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8,10,11 and 13-32 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-8,10,11 and 13-32 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

1. Claims 1-8, 10, 11 and 13-32 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 has been amended to recite volatilizing the uncured monomer "in the unexposed area **by diffusing** some uncured monomer from the unexposed area towards the exposed area" and claim 16 has been amended similarly. However, there does not appear to be support for the aspect of "volatilizingby diffusing" as now set forth in claims 1 and 16. Applicant does have support for volatilizing to form the waveguide, wherein the uncured monomer can diffuse into the exposed area. However, this diffusion is not necessarily linked to the volatilizing as is now apparently claimed. Applicant needs to provide direct support for this or explain how the amended language is not new matter.

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-8, 10, 11 and 13-32 are rejected under 35 U.S.C. 103(a) as being unpatentable over either of Suzuki et al or Chandross et al in view of Nishimura et al (see col. 61, lines 41-42).

The rejection over Suzuki et al or Chandross et al has been reinstated, and these references are applied basically for reasons of record as set forth in the June 10, 2005 action. Namely, the references appear to disclose the basic claimed method lacking at

best the aspect that the unexposed portion consists of the core portion and a diffusion source region. Applicant had argued that these references do not appear to teach a sufficient amount of monomer such that a diffusion source region or index contrast region would be formed. However, Applicant is referred to Figures 2C and 2D of Chandross et al, which clearly shows that the monomer is diffused from the unexposed area to the exposed area during the irradiation. This is submitted to be true since the overall layer 22 initially has a uniform concentration of the monomer. Upon irradiation, a concentration gradient exists with the concentration being much higher at the exposed (ie, raised) area, a little less at the adjacent areas (which would constitute the diffusion source and index contrast regions) and less still in the unexposed areas. It is clear that a diffusion of the polymerizable monomer has occurred. Suzuki et al is applied to teach basically the same process. Both primary references heat the film to volatilize uncured monomer, and the processes taught therein would be inclusive of the original recitations of volatilizing the uncured monomer and forming the waveguide. Again, applicant does not appear to have support for any more than this. The aspect lacking in either primary reference is that the unexposed area would include the core and a diffusion source region. Nishimura et al is applied for reasons of record to teach this. The region directly adjacent to the unexposed area that is the core would become the diffusion source region and the index contrast region on the combination as applied. Again, it is clear that a diffusion of the monomer is occurring during the irradiation of the exposed portion in the primary references, and this diffusion would in fact form the instant diffusion source region and index contrast region. If not, applicant is requested to point

out exactly what differentiates the instant diffusion source and index contrast regions from that shown in either primary reference. Either of the primary references generally teaches the instant polymer binders and polymerizable monomers.

3.Applicant's arguments with respect to the claims have been considered but are moot in view of the new ground(s) of rejection.

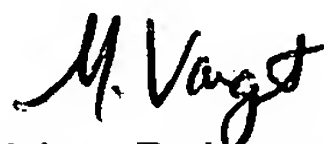
In view of the amendment and upon reconsideration, a new rejection has been made which combines art already of record. Applicant comments concerning Suzuki et al and Chandross et al (ie, after the June 10, 2005 rejection) were revisited and found to be not persuasive of error in the application of these references. Indeed, if applicant persists in the previous line of argument, it should be clearly pointed out why the references do not meet the claims. It is noted that the instant terms—ie, diffusion source and index contrast-- cannot be found in the primary references. However, this does not mean that the processes disclosed in these references are not in fact the basic instant process. Applicant needs to do more than state that the references do not appear to teach these regions, when in fact they do appear to be taught. Also, the new matter needs to be addressed. Again, it is not at all clear from the original disclosure that the volatilizing produces the diffusion, but merely that the monomers are diffused. This diffusion would just as likely have been caused by the irradiation and not the heating.

4.Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mathieu D. Vargot whose telephone number is 571 272-1211. The examiner can normally be reached on Mon-Fri from 9 to 6.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Christina Johnson, can be reached on 571 272-1176. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

M. Vargot
March 12, 2007


Mathieu D. Vargot
Primary Examiner
Art Unit 1732

3/12/07